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(56) Documents Cited

GB 2031289 A GB 0658015 A WO 99/42190 A1

WO 93/15808 A1 FR 002376677 A US 4789370 A

US 3827177 A

(58) Field of Search

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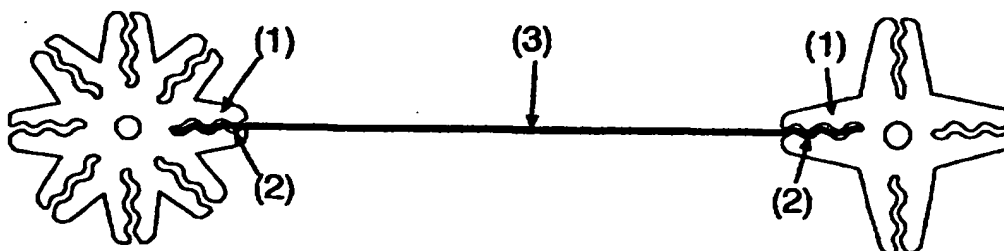
Online: EPODOC, PAJ, WPI.

(54) Abstract Title

Construction toy connector element

(57) A construction toy comprises grips 1 which have zig-zag shaped slots 2 into which flat objects such as cards 3 can be inserted and joined together at different angles to form structures or models. The toy pieces are made with varying numbers of grips determined by the number and type of angles required (A to H, Fig 3). The toy pieces are not designed to connect directly to each other.

FIG. 4 - Demonstrates how the toy pieces are used to join flat objects

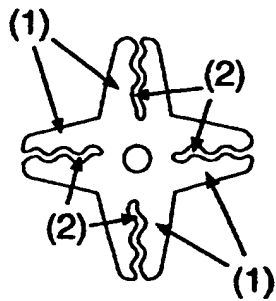


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The claims were filed later than the filing date but within the period prescribed by Rule 25(1) of the Patents Rules 1995.

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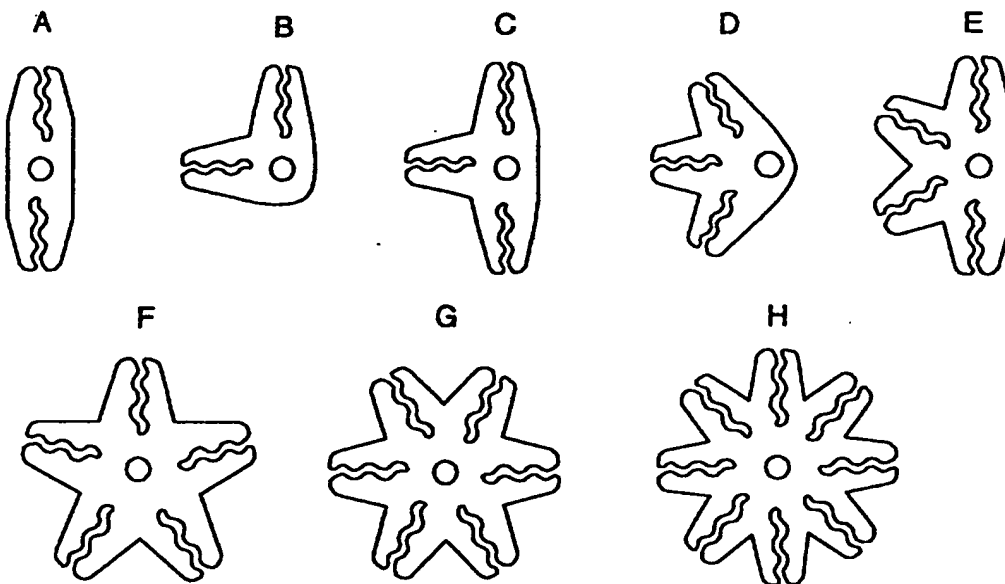
**FIG. 1 - Front view**



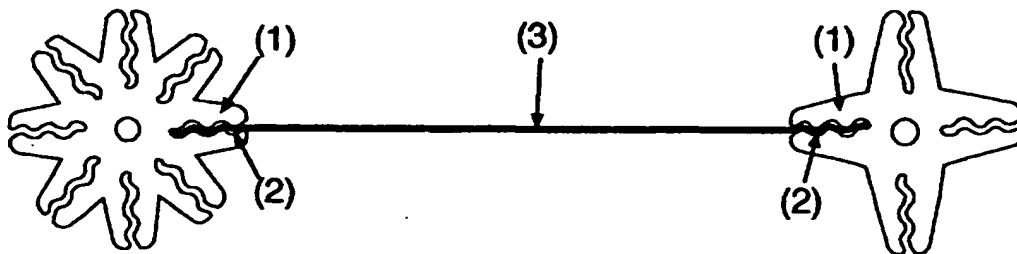
**FIG. 2 - Side View, cross section**



**FIG. 3 varying numbers of grips are possible**



**FIG. 4 - Demonstrates how the toy pieces are used to join flat objects**



## CONSTRUCTION TOY

This invention relates to a construction toy which includes the ability to join various types of flat objects together forming free standing structures of various kinds such as sculptures, models, puzzles or displays.

There are various kinds of construction toys but this toy is uniquely designed to join together different types of suitable independent flat objects.

An object of this invention when used in multiples is to enable the construction of flat objects into sculptures, models, puzzles and displays as a game, artistic endeavour or hobby.

Accordingly, this invention provides a construction toy, which includes multiple integral grips having zig-zag slots. These grips hold various types of flat objects when they are inserted into the zig-zag slots and held firmly together. The different construction angles are determined by the number of grips used in combination on one piece. As such the toy may have a varying number of grips and be of any suitable size.

Preferably this toy is made from a suitable material such as durable plastic, but could be made from metal or wood.

A preferred embodiment of the invention will now be described with reference to the accompanying drawings in which:

FIGURE 1 Shows the front view of the toy as a 4 grips version which shows the the zig-zag slots in which flat objects such as cards can be inserted.

FIGURE 2 Shows a side view of the toy revealing its typical depth to width ratio.

FIGURE 3 Shows some of the different shapes that the construction toy can take with varying numbers of grips being possible, thus enabling different angle combinations.

FIGURE 4 Shows how flat objects like cards insert into the grip slots and are held together.

As shown in Figure 1, the construction toy piece comprises grips (1) which have zig-zag slots (2).

Figure 2 shows the side view revealing the recommended depth to width ratio of the toy.

Figure 3 shows some examples of varying numbers of grips, ranging from two grips (A,B) to six grips (G) and eight grips (H).

Figure 4 shows how flat objects like cards (3) insert into the grips (1) using the zig-zag slots (2).

The construction toy grips (1) have zig-zag slots (2) in which suitable flat objects (3) insert enabling them to be joined together as shown in figure 4.

## **CLAIMS**

- 1. A construction toy comprising integral grips with slots.**
- 2. A construction toy as claimed in Claim 1, wherein grip combinations form different angles of construction.**
- 3. A construction toy as claimed in Claim 1 or Claim 2, wherein each of the grips comprises a zig-zag shaped slot.**
- 4. A construction toy as claimed in Claim 1 or Claim 3, wherein the zig-zag slots function as the gripping mechanism of the toy.**
- 5. A construction toy as claimed in any preceeding claim which has grips with zig-zag slots to hold and link flat objects such as cards together.**
- 6. A construction toy as claimed in any preceeding claim which is made from metal, plastics material or wood, or from a combination of these materials.**
- 7. A construction toy substantially described herein with reference to Figures 1-4 of the accompanying drawing.**

**Amendments to the claims have been filed as follows**

1. A construction toy comprising integral grips with slots, these slots being formed by a channel that is moulded or cut to make a zig-zag or wavelike shape with flat inner sides separated by a void space. The angles of the zig-zag channel are rounded to create a smooth wave shape, the upper and lower curves of this wave channel being equal and opposite.
2. A construction toy as claimed in Claim 1, wherein integral grip combinations form different angles of construction according to the number of grips used in the toy piece.
3. A construction toy as claimed in Claim 1 or Claim 2, wherein each of the grips comprises a wavelike slot or channel, the flat inner sides of which do not employ the use of serrations or retention ridges to retain flat objects such as cards.
4. A construction toy as claimed in Claim 1 or Claim 3, wherein the gripping mechanism is provided by the resilience and natural flexibility of the inserted card in resistance against the flat-sided upper and lower curves of the wavelike slots of the toy.
5. A construction toy as claimed in any preceding claim which has integral grips with wavelike slots to hold and link cards together at various angles of construction to form recognised shapes, model structures or displays.
6. A construction toy as claimed in any preceding claim, which is not designed to connect or join directly to itself.
7. A construction toy as claimed in any preceding claim which does not connect or link together any specially designed plastic, metal or wood plates or plastic, metal or wood flat panels or common objects such as coins, CD-Roms, computer disks or beer mats.
8. A construction toy as claimed in any preceding claim, which links together paper based and/or plastic coated card.
9. A card construction toy as claimed in any preceding claim which is made from metal, plastics material or wood, or from a combination of these materials.
10. A construction toy substantially described herein with reference to Figures 1-4 of the accompanying drawing.



Application No: GB 0011980.0  
Claims searched: 1 to 7

Examiner: Matthew Jefferson  
Date of search: 23 October 2000

## Patents Act 1977 Search Report under Section 17

### Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.R): A6S

Int Cl (Ed.7): A63H 33/06, 33/08, 33/10.

Other: Online: EPODOC, PAJ, WPI.

### Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
X Y	GB 2031289 A (FREDERIKSEN ET AL.) See figures.	X: 1, 2 & 6. Y: 5.
X	GB 658015 A (RAZ) See figures.	1, 2 & 6.
A, P	WO 99/42190 A1 (AJE SARL) See figures.	1.
X	WO 93/15808 A1 (BURKARD) See figures.	X: 1, 2 & 6. Y: 5.
X	US 4789370 A (ELLEFSON) See figures.	X: 1, 2 & 6. Y: 5.
X	US 3827177 A (WENGEL) See figures.	X: 1, 2 & 6. Y: 5.
X Y	FR 2376677 A (BECHTLOFF-FRANZ) See in particular figures 3b & 3c.	X: 1 to 4 & 6. Y: 5.

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
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